

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

To:

see form PCT/ISA/220

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/EP2004/011560

International filing date (day/month/year)
14.10.2004

Priority date (day/month/year)
15.10.2003

International Patent Classification (IPC) or both national classification and IPC
G06F17/50

Applicant
RIETER TECHNOLOGIES AG

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/EP2004/011560

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
 - ☐ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material:
 - ☐ in written format
 - ☐ in computer readable form
 - c. time of filing/furnishing:
 - ☐ contained in the international application as filed.
 - ☐ filed together with the international application in computer readable form.
 - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/EP2004/011560

Box No. II Priority

1. ☐ The following document has not been furnished:

☐ copy of the earlier application whose priority has been claimed (Rule 43bis.1 and 66.7(a)).

☐ translation of the earlier application whose priority has been claimed (Rule 43bis.1 and 66.7(b)).

Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.

2. ☒ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43bis.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.

3. ☐ It has not been possible to consider the validity of the priority claim because a copy of the priority document was not available to the ISA at the time that the search was conducted (Rule 17.1). This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.

4. Additional observations, if necessary:

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)

Yes: Claims 1-3
No: Claims

Inventive step (IS)

Yes: Claims
No: Claims 1-3

Industrial applicability (IA)

Yes: Claims 1-3
No: Claims

2. Citations and explanations

see separate sheet

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING
AUTHORITY (SEPARATE SHEET)**

International application No.

PCT/EP2004/011560

Re Item II

Priority

Current application claims the priority of application EP 03023305, filed on 15.10.2003. Claims 1 - 3 of the current application, however, are not entitled to the right of priority for the following reasons:

The method of optimization according to claim 1 comprises the steps of generating two structural finite element models. The priority document teaches that the optimization is carried out over a single model.

The additional features of claim 2, 3 comprise shape modification of the structures, while the priority document teaches that the structure is not altered and only the location and number of the treatments is optimized.

Therefore claims 1 - 3 are not entitled the right of priority because the subject-matter of said claims goes beyond the disclosure of the priority document (PCT International Search and Preliminary Examination Guidelines 6.09).

Re Item V

**Reasoned statement with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

1. Reference is made to the following document:

D1: TRINDADE MARCELO A: "Optimization of sandwich/multilayer viscoelastic composite structure for vibration damping" 20TH INTERNATIONAL CONFERENCE ON OFFSHORE MECHANICS AND ARCTIC ENGINEERING; MATERIALS; RIO DE JANEIRO, BRAZIL JUN 3-8 2001, vol. 3, 2001, pages 257-264, XP008028067 Proc Int Conf Offshore Mech Arct Eng - OMAE; Proceedings of the International Conference on Offshore Mechanics and Arctic Engineering - OMAE 2001

2. The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1 does not involve an inventive step in the sense of Article 33(3) PCT.
3. The subject-matter of claim 1 is unclear. Said claim comprises not generally recognized trademarks, contrary to the requirements of PCT International Search and Preliminary Examination Guidelines 5.39. The claim comprises further features in brackets (parentheses) and the expressions "i.e." and "in particular". Such a wording results in ambiguity which renders the scope of the claim unclear (PCT International Search and Preliminary Examination Guidelines 5.40). The claim comprises further the expression "if required" which implies that steps are executed only if certain conditions are met, without specifying said conditions. Therefore the skilled person would be unable to determine the scope of protection, being sought.
4. Although claim 1 is unclear, it will be examined, using interpretation in the light of the description.
5. The document D1 is regarded as being the closest prior art to the subject-matter of claim 1, and discloses (the references in parentheses applying to this document) an optimization and simulation method for determining optimal damping treatments (abstract) comprising the steps of generating a finite element model of the body on which damping has to be optimized (abstract "the structure is modelled by finite element model") and defining a plurality of possible damping treatments including no treatment and determining their characteristics (p. 586, right-hand col., lines 1 - 4, "The thickness... $0.60 + 0.05j$, $j = 0, 1, \dots, 15$ "). The applicant should note that the initial thickness of the elements is 1 (p. 586, left-hand col.). Therefore $j=8$ corresponds to no treatment. D1 teaches further that a genetic algorithm is applied to the input variables (p.583, right-hand col., lines 11 - 13). D1 discloses also a step of computing the equivalent material properties (p. 589, left-hand col., line 6, "lumped mass approach"). D1 discloses further a running of a simulation for a reference configuration in order to calculate the dynamic response in the frequency domain (p. 587, left-hand col., lines 10 - 12 "the frequency response of the initial and optimized

structures are given in Figs. 7 and 8").

6. The subject-matter of claim 1 therefore differs from this known D1 in that it does not disclose a step of generating a further finite element model of the structure. This second model, however, is not referred to by any method steps. Therefore the step of generating said model is not functional and no technical problem may be defined based on said difference. Therefore the difference does not contribute to inventive step.
7. Dependent claims 2 - 3 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of inventive step.
8. The subject-matter of claims 1-3 relates to vibration damping optimization and is industrially applicable in the field of computer aided design of mechanical structures.

Re Item VIII

Certain observations on the international application

Claims 1-3 are unclear contrary to the requirements of Article 6 PCT (see section V, point 3). It also appears that the two part form is not appropriate for the subject-matter of claims 1-3.